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IN THE UNITED STATES PATENT OFFICE

In re patent application of: )  
)  
Oleg Wasynczuk et al. ) Before the Examiner  
) Ayal I. Sharon  
Application No. 09/884,528 )  
) Group Art Unit 2123  
Filed: June 19, 2001 ) Conf. No. 2652  
) December 10, 2007  
DISTRIBUTED SIMULATION )  
)

**REPLY BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Examiner's Answer issued by the Examiner on October 9, 2007 in connection with the above-indicated application, a Reply Brief according to 37 CFR §41.41 is hereby provided. No fees are believed to be due; however, should any fees be deemed necessary, the Commissioner is authorized to charge any deficiency or credit any overpayment to Deposit Account No. 23-3030, but not to include issue fees.

## ARGUMENT

The Examiner has maintained his rejection of Claims 1-13, 16-20, 24-26 and 29-42 under 35 U.S.C. §101 for allegedly lacking a “concrete, tangible and useful result” (Examiner’s Answer, ¶¶2-3). Appellant respectfully traverses.

It is respectfully submitted that the Examiner mischaracterizes the Supreme Court’s holding in Gottschalk v. Benson, 175 USPQ 673 (1972) when he states:

“The Examiner finds that the claims in the instant application share the same characteristics as the claims in Gottschalk. The claims in the instant application are directed to a machine-implemented abstract idea. These claims are: (1) so abstract and sweeping as to cover both known and unknown uses of the underlying math, (2) so abstract and sweeping as to be applicable to a wide variety of unrelated applications.” (Examiner’s Answer, p. 6, ll. 13-18).

This is not the holding of Gottschalk and does not represent any test for statutory subject matter under 35 U.S.C. §101 promulgated by Gottschalk. The holding of Gottschalk is stated therein as follows:

“It is conceded that one may not patent an idea. But in practical effect that would be the result if the formula for converting binary code to pure binary were patented in this case. The mathematical formula involved here has no substantial practical application except in connection with a digital computer, which means that if the judgment below is *affirmed*, the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.”

(Gottschalk, 175 USPQ at 676 (italics in original, underlining added)). Gottschalk therefore stands for the proposition that one may not patent a mathematical formula. The Supreme Court

itself thusly characterized Gottschalk in the later case of Diamond v. Diehr, 209 USPQ 1 (1981) when it said “[a] mathematical formula as such is not accorded the protection of our patent laws, Gottschalk v. Benson, supra” (Diehr, 209 USPQ at 10).

Clearly, the present claims do not seek to patent a mathematical formula or algorithm. All of the claims on appeal deal with specific methodologies for running simulations of subsystems on different computer processes, and sharing information between the simulations without that information flowing through a central communication process. The claims are directed toward a methodology for partitioning a large simulation and distributing that simulation among multiple computer processes so that it may be executed faster. Whether the claimed subject matter would “cover known and unknown uses of the underlying math” or be “applicable to a wide variety of unrelated applications,” as the Examiner has spent many lines discussing, is irrelevant to the legal test of Gottschalk. Patenting of the claims on appeal is not tantamount to patenting a mathematical formula or algorithm, and such claims are thus statutory subject matter in view of the Supreme Court’s Gottschalk and Diehr decisions. In fact, the Examiner has never identified exactly what mathematical formula or algorithm he believes Appellant is attempting to patent.

With respect to State Street v. Signature Financial, 47 USPQ2d 1596 (Fed. Cir. 1998), the Examiner noted “that State Street was decided by a lower court, and therefore does not overrule the Supreme Court decision in Gottschalk (sic)” (Examiner’s Answer, p. 8, ll. 1-2). Appellant agrees that the State Street decision was consistent with prior Supreme Court precedent. The Supreme Court acknowledged this when they refused to review the State Street case on writ of certiorari (see State Street Bank and Trust Co. v. Signature Financial Group, Inc., 525 U.S. 1093, 119 S.Ct. 851, 142 L.Ed.2d 704, 67 USLW 3302, 67 USLW 3327, 67 USLW 3431, 67 USLW


3436 (U.S. Jan 11, 1999) (NO. 98-657)). In attempting to counter Appellant's accurate portrayal of the direct analogies between the claimed invention in State Street and the claimed invention in the present application, the Examiner repeatedly makes reference to how broad Appellant's claims are. For example, it is stated that "Examiner finds that 'data representing the state of a computer-simulated physical subsystem' is far too (sic) broad to constitute a 'useful, concrete and tangible result'" (Examiner's Answer, p. 9, ll. 12-14). The Examiner has already determined that Appellant's claims are of appropriate breadth to meet the novelty and nonobviousness standards of 35 U.S.C. §§102 and 103. The breadth of the claims is not at issue under 35 U.S.C. §101.

As stated in State Street, "[a]fter *Diehr* and *Alappat*, the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing numbers, in and of itself, would not render it nonstatutory subject matter, unless, of course, its operation does not produce a 'useful, concrete and tangible result.'" State Street 47 USPQ2d at 1602. The results produced by the presently claimed invention are useful (they allow scientists and engineers to determine the future state of a modeled system in response to given inputs), concrete (they define the actual state of the modeled system) and tangible (the claims require the data to be output from the model).

Furthermore, the claims on appeal are directly analogous to the allowable result produced in State Street. Both the presently claimed invention and the system discussed in State Street use a computer to model a real-world thing (physical subsystems or mutual funds), use mathematical operations to determine some descriptive aspect of that real-world thing (state of the physical subsystem or share price of the mutual fund), and then output this descriptive aspect. It is therefore believed that claims 1-13, 16-20, 24-26 and 29-42 are allowable under 35 U.S.C. §101

for the same reasons that the court in State Street found the claims at issue to represent statutory subject matter.

Respectfully Submitted:

A handwritten signature in black ink, appearing to read "Troy J. Cole", is written over a horizontal line.

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